Make: Electronic Skill Badge

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TOOLS:

- Rosin-core solder (1)
- Soldering iron (1)
- Wire cutters (1)
  aka side cutters

PARTS:

- Learn-to-Solder Skill Badge Kit (1)

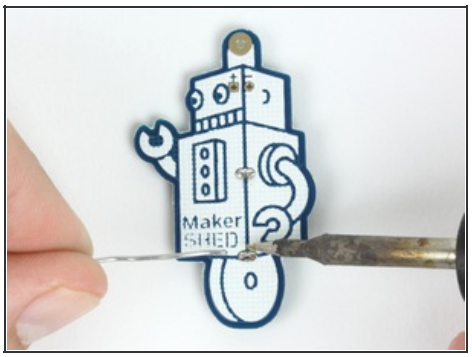
SUMMARY

At Maker Faire, we teach folks to solder for $1 in the Maker Shed store. What do you get for $1? Not much these days! Well, that's just not the case here. For just $1, you get expert advice on how to solder and a really cool electronic skill badge!

Step 1 — Make: Electronic Skill Badge

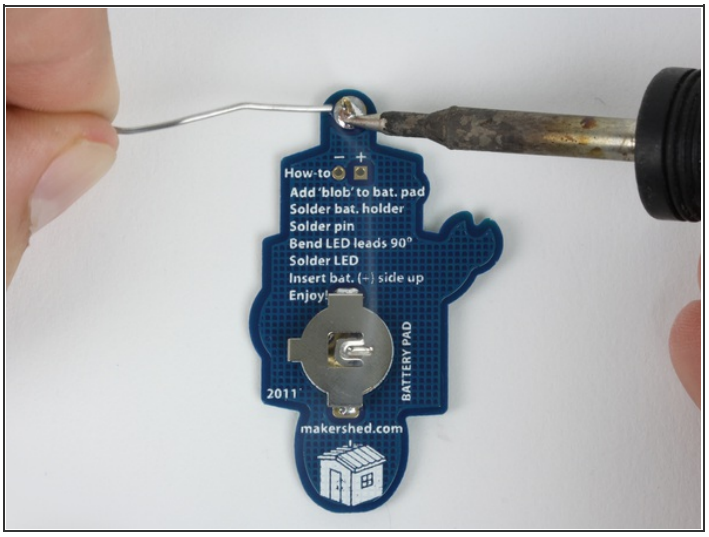
- Check your kit's contents. You should have:
  - Printed circuit board
  - Rainbow LED
  - Battery holder
  - 3V CR1220 battery
  - Tie-tack pin
  - Tie-tack clutch

Step 2



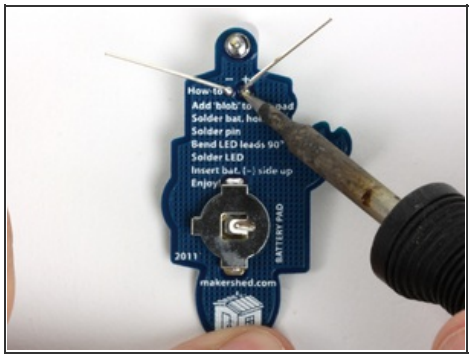
- Start by adding a "blob" of solder to the battery pad on the back. Just a little will help the battery stay snug in the holder.
- Next, place the battery holder in the printed circuit board (PCB). It goes on the back of the PCB, and is oriented according to the silk screen on the board.
- Now you can solder the battery holder from the front of the pin. Flip it over, and place it on a flat surface.
- Now heat up the pins of the battery holder with your soldering iron and solder it in place.

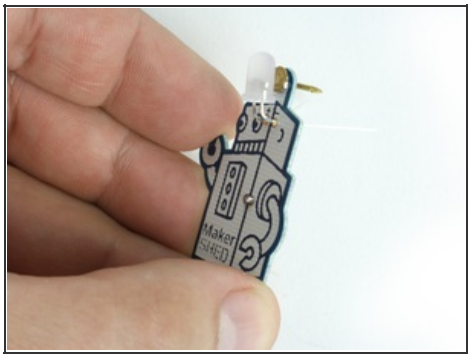
Step 3



- Next solder in the tie-tack pin.
- Place the pin though the hole in the front of the PCB. It will not fall through the hole; just let it go!
- Now apply heat to the pin from the back, and solder it into place.

Step 4





- Now add the light-emitting diode (LED).
- First, note which wire lead is longer on the LED. This wire is the anode, or positive (+), lead and will eventually be inserted into the hole marked (+) on the PCB.
  - The shorter lead on the LED is the cathode, or (-), lead. This is placed in the (-) hole on the PCB.
- Now that you have identified the (+) and (-) leads, hold the LED so it is oriented correctly on the board and bend the leads 90° down towards the board.
- Now you can insert the LED into the PCB. It should sit flat against it.
- Flip the board over, and spread the leads apart. This will keep the LED in place
- Solder the LED in place.

Step 5

- Finish it up!
- Now all you have to do is insert the battery.
- Make sure the (+) side of the battery is facing up.
- Now you can pin it to your bag, hat, or whatever and show off your soldering skills!

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